

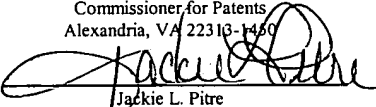


PATENT
TH2564

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/693,818
Filing Date: October 24, 2003
Confirmation No.: 1103
Inventor: Vinegar et al.
Title: STAGED AND/OR
PATTERNED HEATING
DURING IN SITU THERMAL
PROCESSING OF A
HYDROCARBON
CONTAINING FORMATION

§ Examiner: unknown
§ Art Unit: 3672
§ Atty. Dkt. No.: 5659-21500
§
§
§
§
§
§
§
§
§
§

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8	
DATE OF DEPOSIT:	<u>4/26/04</u>
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail on the date indicated above and is addressed to:	
Commissioner for Patents Alexandria, VA 22313-1450	
 Jackie L. Pitre	

INFORMATION DISCLOSURE STATEMENT

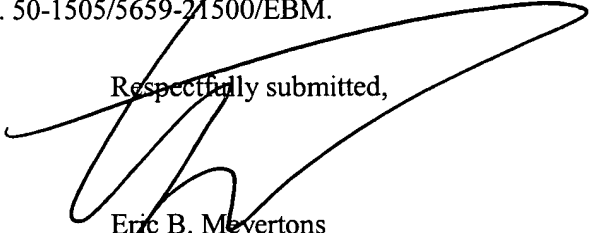
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

It is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 (references A204-A227, C99-C102, D6-D7, J19 and A228-A340) be considered by the Examiner and made of record. Copies of the listed documents are enclosed for the convenience of the Examiner.

Should any fees be required, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account No. 50-1505/5659-21500/EBM.


Respectfully submitted,


Eric B. Meyertons
Reg. No. 34,876

Attorney for Applicant

MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. Box 398
Austin, Texas 78767-0398
Ph: (512) 853-8800
Fax: (512) 853-8801

Date: 4/26/04

Form PTO-1449 (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)		ATTY. DKT. NO. 5659-21500 APPLICANT: Vinegar et al. FILING DATE: 10/24/2003	SERIAL NO. 10/693,818 CONFIRMATION NO: 1103 ART UNIT: 3672
---	--	---	--

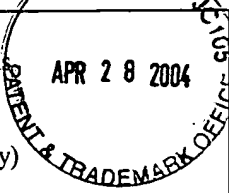
FOREIGN PATENT DOCUMENTS

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO
	A204	121,737	03/1948	Sweden			
	A205	123,136	11/1948	Sweden			
	A206	123,137	11/1948	Sweden			
	A207	123,138	11/1948	Sweden			
	A208	126,674	11/1949	Sweden			
	A209	1,196,594	11/1985	CA			
	A210	1,253,555	05/1989	CA			
	A211	1,288,043	08/1991	CA			
	A212	156,396	01/1921	GB			
	A213	674,082	06/1952	GB			
	A214	697,189	09/1953	GB			
	A215	1,454,324	11/1976	GB			
	A216	1,501,310	02/1978	GB			
	A217	2,086,416	05/1982	GB			
	A218	1836876	12/1994	SU			
	A219	0570228 B1	09/1996	EP			
	A220	99/01640	01/1999	WO			
	A221	95/06093	03/1995	WO			
	A222	95/12746	05/1995	WO			
	A223	95/33122	12/1995	WO			
	A224	95/12742	05/1995	WO			
	A225	95/12743	05/1995	WO			
	A226	95/12744	05/1995	WO			
	A227	95/12745	05/1995	WO			
	C99	2,015,460	10/1991	CA			
	C100	940558 A1	9/1999	EP			
	C101	01/81723 A1	11/2001	WO			
	C102	01/81505 A1	11/2001	WO			
	D6	1,165,361	4/1984	CA			

EXAMINER:

DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

Form PTO-1449 (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)			ATTY. DKT. NO. 5659-21500 APPLICANT: Vinegar et al. FILING DATE: 10/24/2003	SERIAL NO. 10/693,818 CONFIRMATION NO: 1103 ART UNIT: 3672	
	D7	1,168,283	5/1994	CA	
	J19	97/01017	Jan-1997	WO	

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

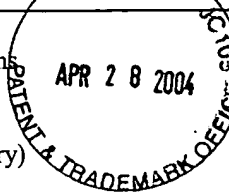
A228	Some Effects of Pressure on Oil-Shale Retorting," Society of Petroleum Engineers Journal, J.H. Bae, September, 1969; pp. 287-292.
A229	New in situ shale-oil recovery process uses hot natural gas; The Oil & Gas Journal; May 16, 1966, p. 151.
A230	Evaluation of Downhole Electric Impedance Heating Systems for Paraffin Control in Oil Wells; Industry Applications Society 37 th Annual Petroleum and Chemical Industry Conference; The Institute of Electrical and Electronics Engineers Inc., Bosch et al., September 1990, pp. 223-227.
A231	New System Stops Paraffin Build-up; Petroleum Engineer, Eastlund et al., January 1989, (3 pages).
A232	Oil Shale Retorting: Effects of Particle Size and Heating Rate on Oil Evolution and Intraparticle Oil Degradation; Campbell et al. In Situ 2(1), 1978, pp. 1-47.
A233	The Potential For In Situ Retorting of Oil Shale In the Piceance Creek Basin of Northwestern Colorado; Dougan et al., Quarterly of the Colorado School of Mines, pp. 57-72.
A234	Retoring Oil Shale Underground-Problems & Possibilities; B.F. Grant, Qtly of Colorado School of Mines, pp 39-46.
A235	Molecular Mechanism of Oil Shale Pyrolysis in Nitrogen and Hydrogen Atmospheres, Hershkovitz et al.; Geochemistry and Chemistry of Oil Shales, American Chemical Society, 5/1983 pp. 301-316.
A236	The Characteristics of a Low Temperature in Situ Shale Oil; George Richard Hill & Paul Dougan, Quarterly of the Colorado School of Mines, 1967; pp. 75-90.
A237	Direct Production Of A Low Pour Point High Gravity Shale Oil; Hill et al., I & EC Product Research and Development, 6(1), March 1967; pp. 52-59.
A238	Refining Of Swedish Shale Oil, L. Lundquist, pp. 621-627.
A239	The Benefits of In Situ Upgrading Reactions to the Integrated Operations of the Orinoco Heavy-Oil Fields and Downstream Facilities, Myron Kuhlman, Society of Petroleum Engineers, June 2000; pp. 1-14.
A240	Monitoring Oil Shale Retorts by Off-Gas Alkene/Alkane Ratios, John H. Raley, Fuel, Vol. 59, June 1980, pp. 419-424.
A241	The Shale Oil Question, Old and New Viewpoints, A Lecture in the Engineering Science Academy, Dr. Fredrik Ljungstrom, February 23, 1950, published in Teknisk Trdskrift, January 1951 p. 33-40.
A242	Underground Shale Oil Pyrolysis According to the Ljungstroem Method; Svenska Skifferolje Aktiebolaget (Swedish Shale Oil Corp.), IVA, Vol. 24, 1953, No. 3, pp. 118-123.
A243	Kinetics of Low-Temperature Pyrolysis of Oil Shale by the IITRI RF Process, Sresty et al.; 15 th Oil Shale Symposium, Colorado School of Mines, April 1982 pp. 1-13.
A244	Bureau of Mines Oil-Shale Research, H.M. Thorne, Quarterly of the Colorado School of Mines, pp. 77-90.
A245	Application of a Microretort to Problems in Shale Pyrolysis, A. W. Weitkamp & L.C. Gutberlet, Ind. Eng. Chem. Process Des. Develop. Vol. 9, No. 3, 1970, pp. 386-395.
A246	Oil Shale, Yen et al., Developments in Petroleum Science 5, 1976, pp. 187-189, 197-198.
A247	The Composition of Green River Shale Oils, Glenn L. Cook, et al., United Nations Symposium on the Development and Utilization of Oil Shale Resources, 1968, pp. 1-23.
A248	High-Pressure Pyrolysis of Green River Oil Shale, Burnham et al., Geochemistry and Chemistry of Oil Shales, American Chemical Society, 1983, pp. 335-351.
A249	Geochemistry and Pyrolysis of Oil Shales, Tissot et al., Geochemistry and Chemistry of Oil Shales, American Chemical Society, 1983, pp. 1-11.
A250	A Possible Mechanism of Alkene/Alkane Production, Burnham et al., Oil Shale, Tar Sands, and Related Materials, American Chemical Society, 1981, pp. 79-92.

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

Form PTO-1449 (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)		ATTY. DKT. NO. 5659-21500 APPLICANT: Vinegar et al. FILING DATE: 10/24/2003	SERIAL NO. 10/693,818 CONFIRMATION NO: 1103 ART UNIT: 3672
---	--	---	--

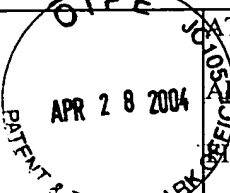
A251	The Ljungstroem In-Situ Method of Shale Oil Recovery, G. Salomonsson, Oil Shale and Cannel Coal, Vol. 2, Proceedings of the Second Oil Shale and Cannel Coal Conference, Institute of Petroleum, 1951, London, pp. 260-280.
A252	Developments in Technology for Green River Oil Shale, G.U. Dinneen, United Nations Symposium on the Development and Utilization of Oil Shale Resources, Laramie Petroleum Research Center, Bureau of Mines, 1968, pp.1-20.
A253	The Thermal and Structural Properties of a Hanna Basin Coal, R.E. Glass, Transactions of the ASME, Vol. 106, June 1984, pp. 266-271.
A254	The Thermal and Structural Properties of the Coal in the Big Coal Seam, R.E. Glass, In Situ, 8(2), 1984, pp. 193-205.
A255	Investigation of the Temperature Variation of the Thermal Conductivity and Thermal Diffusivity of Coal, Badzioch et al., Fuel, Vol. 43, No. 4, July 1964, pp. 267-280.
A256	On the Mechanism of Kerogen Pyrolysis, Alan K. Burnham & James A. Happe, January 10, 1984 (17 pages).
A257	Comparison of Methods for Measuring Kerogen Pyrolysis Rates and Fitting Kinetic Parameters, Burnham et al., March 23, 1987, (29 pages).
A258	Further Comparison of Methods for Measuring Kerogen Pyrolysis Rates and Fitting Kinetic Parameters, Burnham et al., September 1987, (16 pages).
A259	Tests of a Mechanism for H ₂ S Release During Coal Pyrolysis, Coburn et al., May 31, 1991, (6 pages).
A260	Kinetic Studies of Gas Evolution During Pyrolysis of Subbituminous Coal, J. H. Campbell et al., May 11, 1976, (14 pages).
A261	Excavation of the Partial Seam Crip Underground Coal Gasification Test Site, Robert J. Cena, August 14, 1987, (11 pages).
A262	Evolution of Sulfur Gases During Coal Pyrolysis, Oh et al., February 3, 1988, (11 pages).
A263	Coal Pyrolysis and Methane Decomposition In the Presence of a Hot Char Bed, Peters et al., August 1983, (21 pages).
A264	Pyrolysis Kinetics and Maturation of Coals from the San Juan Basin, John G. Reynolds & Alan K. Burnham, December 1992, (30 pages).
A265	Numerical Model of Coal Gasification in a Packed Bed, A.M. Winslow, April 1976 (27 pages).
A266	LLL In-Situ Coal Gasification Program, Stephens et al., June, 14, 1976 (12 pages)
A267	Pyrolysis of Subbituminous Coal as it Relates to In-Situ Coal Gasification, J.H. Campbell, January 17, 1977 (20 pages).
A268	The Historical Development of Underground Coal Gasification, D. Olness & D.W. Gregg, June 30, 1977 (60 pages).
A269	Laboratory Measurements of Groundwater Leaching and Transport of Pollutants Produced During Underground Coal Gasification, V.A. Dalton & J.H. Campbell, March 1, 1978 (21 pages).
A270	The Hoe Creek II Field Experiment of Underground Coal Gasification, Preliminary Results, Aiman et al., February 27, 1978 (26 pages).
A271	Ground-Water and Subsidence Investigations of the LLL In Situ Coal Gasification Experiments, Mead et al, July 17-20, 1978 (31 pages).
A272	Geotechnical Instrumentation Applied to In Situ Coal Gasification Induced Subsidence, Ganow et al. June 21, 1978 (16 pages).
A273	The Use of Tracers in Laboratory and Field Tests of Underground Coal Gasification and Oil Shale Retorting, Lyczkowski et al., June 16, 1978 (19 pages).
A274	Underground Gasification of Rocky Mountain Coal, D.R. Stephens and R.W. Hill, July 18, 1978 (15 pages).
A275	High-BTU Gas Via In Situ Coal Gasification, Stephens et al., October, 1978 (41 pages).
A276	A One-Dimensional Model for In Situ Coal Gasification, Thorsness et al., August 25, 1978 (76 pages).
A277	Control Aspects of Underground Coal Gasification: LLL Investigations of Ground-Water and Subsidence Effects, Mead et al., November 10, 1978 (21 pages).

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

Form PTO-1449 (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)		ATTY. DKT. NO. 5659-21500 APPLICANT: Vinegar et al. FILING DATE: 10/24/2003	SERIAL NO. 10/693,818 CONFIRMATION NO: 1103 ART UNIT: 3672
---	--	---	--

A278	Environmental Controls for Underground Coal Gasification: Ground-Water Effects and Control Technologies, Warren Mead & Ellen Raber, March 14, 1980 (19 pages).
A279	Results from the Third LLL Underground Coal Gasification Experiment at Hoe Creek, Hill et al., May 20, 1980 (12 pages).
A280	Results From the Hoe Creek No. 3 Underground Coal Gasification Experiment, Thorsness et al., May 1980, (11 pages).
A281	Steam Tracer Experiment at the Hoe Creek No. 3 Underground Coal Gasification Field Test, C.B. Thorsness, November 26, 1980 (51 pages).
A282	Computer Models to Support Investigations of Surface Subsidence and Associated Ground Motion Induced by Underground Coal Gasification, R.T. Langland & B.C. Trent, July 1981 (16 pages).
A283	Burn Cavity Growth During the Hoe Creek No. 3 Underground Coal Gasification Experiment, R.W. Hill, June 8, 1981 (28 pages).
A284	The Controlled Retracting Injection Point (Crip) System: A Modified Stream Method for <u>In Site</u> Coal Gasification, R.W. Hill & M.J. Shannon, April 15, 1981 (11 pages).
A285	Coal Block Gasification Experiments: Laboratory Results and Field Plans: C.B. Thorsness & R.W. Hill, July 1981 (23 pages).
A286	Laboratory Scale Simulation of Underground Coal Gasification: Experiment and Theory, J.R. Creighton & (27 pages).
A287	Underground Coal Gasification – A Leading Contender in the Synfuels Industry, D.R. Stephens, October 27, 1981 (42 pages).
A288	Computer Models to Support Investigations of Surface Subsidence and Associated Ground Motion Induced by Underground Coal Gasification, B.C. Trent & R.T. Langland, August 1981 (40 pages).
A289	The Hoe Creek Experiments: LLNL's Underground Coal Gasification Project in Wyoming, D.R. Stephens, October 1981 (162 pages).
A290	Technical Underground Coal Gasification Summation: 1982 Status, Stephens et al., July 1982 (22 pages).
A291	Review of Underground Coal Gasification Field Experiments at Hoe Creek (34 pages).
A292	Underground Coal Gasification Using Oxygen and Steam, Stephens et al., January 19, 1984 (37 pages).
A293	Shale Oil Cracking Kinetics and Diagnostics, Bissell et al., November 1983, (27 pages).
A294	Mathematical Modeling of Modified In Situ and Aboveground Oil Shale Retorting, Robert L. Braun, January 1981 (45 pages).
A295	Progress Report on Computer Model for In Situ Oil Shale Retorting, R.L. Braun & R.C.Y. Chin, July 14, 1977 (34 pages).
A296	Analysis of Multiple Gas-Solid Reactions During the Gasification of Char in Oil Shale Blocks, Braun et al., April 1981 (14 pages).
A297	Chemical Kinetics and Oil Shale Process Design, Alan K. Burnham, July 1993 (16 pages).
A298	Reaction Kinetics and Diagnostics For Oil Shale Retorting, Alan K. Burnham, October 19, 1981 (32 pages).
A299	Reaction Kinetics Between Steam and Oil Shale Char, A.K. Burnham, October 1978 (8 pages).
A300	General Kinetic Model of Oil Shale Pyrolysis, Alan K. Burnham & Robert L. Braun, December 1984 (25 pages).
A301	General Model of Oil Shale Pyrolysis, Alan K. Burnham & Robert L. Braun, November 1983 (22 pages).
A302	Pyrolysis Kinetics for Green River Oil Shale From the Saline Zone, Burnham et al., February, 1982 (33 pages).
A303	Reaction Kinetics Between CO ₂ and Oil Shale Char, A.K. Burnham, March 22, 1978 (9 pages front & back).
A304	Reaction Kinetics Between CO ₂ and Oil Shale Residual Carbon. I. Effect of Heating Rate on Reactivity, Alan K. Burnham, July 11, 1978 (11 pages front and back).

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

Form PTO-1449 (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)	ATTY. DKT. NO. 5659-21500 APPLICANT: Vinegar et al. FILING DATE: 10/24/2003	SERIAL NO. 10/693,818 CONFIRMATION NO: 1103 ART UNIT: 3672
		

A305	High-Pressure Pyrolysis of Colorado Oil Shale, Alan K. Burnham & Mary F. Singleton, October 1982 (23 pages).
A306	A Possible Mechanism Of Alkene/Alkane Production in Oil Shale Retorting, A.K. Burnham, R.L. Ward, November 26, 1980 (20 pages).
A307	Enthalpy Relations For Eastern Oil Shale, David W. Camp, November 1987 (13 pages).
A308	Oil Shale Retorting: Part 3 A Correlation of Shale Oil 1-Alkene/ <i>n</i> -Alkane Ratios With Yield, Coburn et al., August 1, 1977 (18 pages).
A309	The Composition of Green River Shale Oil, Glen L. Cook, et al., 1968 (12 pages).
A310	On-line, Mass Spectrometric Determination of Ammonia From Oil Shale Pyrolysis Using Isobutane Chemical Ionization, Crawford et al., March 1988 (16 pages).
A311	Thermal Degradation of Green River Kerogen at 150° to 350° C Rate of Production Formation, J.J. Cummins & W.E. Robinson, 1972 (18 pages).
A312	Retorting of Green River Oil Shale Under High-Pressure Hydrogen Atmospheres, LaRue et al., June 1977 (38 pages).
A313	Retorting and Combustion Processes In Surface Oil-Shale Retorts, A.E. Lewis & R.L. Braun, May 2, 1980 (12 pages).
A314	Oil Shale Retorting Processes: A Technical Overview, Lewis et al., March 1984 (18 pages).
A315	Study of Gas Evolution During Oil Shale Pyrolysis by TQMS, Oh et al., February 1988 (10 pages).
A316	The Permittivity and Electrical Conductivity of Oil Shale, A.J. Piwinskii & A. Duba, April 28, 1975 (12 pages).
A317	Oil Degradation During Oil Shale Retorting, J.H. Raley & R.L. Braun, May 24, 1976 (14 pages).
A318	Kinetic Analysis of California Oil Shale By Programmed Temperature Microphyrolysis, John G. Reynolds & Alan K. Burnham, December 9, 1991 (14 pages).
A319	Analysis of Oil Shale and Petroleum Source Rock Pyrolysis by Triple Quadrupole Mass Spectrometry: Comparisons of Gas Evolution at the Heating Rate of 10°C/Min., Reynolds et al. October 5, 1990 (57 pages).
A320	Catalytic Activity of Oxidized (Combusted) Oil Shale for Removal of Nitrogen Oxides with Ammonia as a Reductant in Combustion Gas Streams, Part II, Reynolds et al., January 4, 1993 (9 pages).
A321	Fluidized-Bed Pyrolysis of Oil Shale, J.H. Richardson & E.B. Huss, October 1981 (27 pages).
A322	Retorting Kinetics for Oil Shale From Fluidized-Bed Pyrolysis, Richardson et al., December 1981 (30 pages).
A323	Recent Experimental Developments in Retorting Oil Shale at the Lawrence Livermore Laboratory, Albert J. Rothman, August 1978 (32 pages).
A324	The Lawrence Livermore Laboratory Oil Shale Retorts, Sandholtz et al. September 18, 1978 (30 pages).
A325	Operating Laboratory Oil Shale Retorts In An In-Situ Mode, W. A. Sandholtz et al., August 18, 1977 (16 pages).
A326	Some Relationships of Thermal Effects to Rubble-Bed Structure and Gas-Flow Patterns in Oil Shale Retorts, W. A. Sandholtz, March 1980 (19 pages).
A327	Assay Products from Green River Oil Shale, Singleton et al., February 18, 1986 (213 pages).
A328	Biomarkers in Oil Shale: Occurrence and Applications, Singleton et al., October 1982 (28 pages).
A329	Occurrence of Biomarkers in Green River Shale Oil, Singleton et al., March 1983 (29 pages).
A330	An Instrumentation Proposal for Retorts in the Demonstration Phase of Oil Shale Development, Clyde J. Sisemore, April 19, 1977, (34 pages).
A331	A Laboratory Apparatus for Controlled Time/Temperature Retorting of Oil Shale, Stout et al., November 1, 1976 (19 pages).
A332	SO ₂ Emissions from the Oxidation of Retorted Oil Shale, Taylor et al., November 1981 (9 pages).

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

Form PTO-1449 (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)		ATTY. DKT. NO. 5659-21500 APPLICANT: Vinegar et al. FILING DATE: 10/24/2003	SERIAL NO. 10/693,818 CONFIRMATION NO: 1103 ART UNIT: 3672
	A333	Nitric Oxide (NO) Reduction by Retorted Oil Shale, R.W. Taylor & C.J. Morris, October 1983 (16 pages).	
	A334	Coproduct of Oil and Electric Power from Colorado Oil Shale, P. Henrik Wallman, September 24, 1991 (20 pages).	
	A335	¹³ C NMR Studies of Shale Oil, Raymond L. Ward & Alan K. Burnham, August 1982 (22 pages).	
	A336	Identification by ¹³ C NMR of Carbon Types in Shale Oil and their Relationship to Pyrolysis Conditions, Raymond L. Ward & Alan K. Burnham, September 1983 (27 pages).	
	A337	A Laboratory Study of Green River Oil Shale Retorting Under Pressure In a Nitrogen Atmosphere, Wise et al., September 1976 (24 pages).	
	A338	Quantitative Analysis and Evolution of Sulfur-Containing Gases from Oil Shale Pyrolysis by Triple Quadrupole Mass Spectrometry, Wong et al., November 1983 (34 pages).	
	A339	Quantitative Analysis & Kinetics of Trace Sulfur Gas Species from Oil Shale Pyrolysis by Triple Quadrupole Mass Spectrometry (TQMS), Wong et al., July 5-7, 1983 (34 pages).	
	A340	Application of Self-Adaptive Detector System on a Triple Quadrupole MS/MS to High Explosives and Sulfur-Containing Pyrolysis Gases from Oil Shale, Carla M. Wong & Richard W. Crawford, October 1983 (17 pages).	

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.